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Claims

1. An emergency generating unit to supply power to a train in the case of electrical power outage, characterized in that it comprises a gas turbine (23).
- 5 2. Generating unit according to claim 1, characterized in that said turbine is powered using liquid fuel.
3. Generating unit according to claim 1 or 2, characterized in that it comprises an electrical generator (29), operated by said turbine and an inverter (31).
- 10 4. Generating unit according to claim 3, characterized in that it comprises a supporting frame (21) in which said turbine, said electrical generator and said inverter are arranged, said frame presenting securing means (33, 35) to a carrying structure of said train.
- 15 5. Generating unit according to claim 4, characterized in that said frame is shaped and dimensioned to be housed in a compartment (19) underneath the floor (17) of the train.
6. Generating unit according to claim 4 or 5, characterized in that said securing means comprise sliding guides (33) which are
- 20 integral to said carrying structure.
7. Generating unit according at least to claim 2, characterized by a fuel tank (41) with fastening means (47) to a carrying structure of the train.
8. Generating unit according to claim 7, characterized in that said
- 25 fuel tank is shaped to be housed in a compartment (20) underneath the floor (17) of the train.
9. Generating unit according to claim 8, characterized in that a fuel pump housed in the same compartment as the tank is associated to said tank.
- 30 10. Emergency generating unit according to one or more of the preceding claims, characterized in that it presents a circuit (53-69) for regulating the rotation speed of the turbine.

11. Emergency generating unit according to one or more of the preceding claims, characterized in that the suction manifold and the exhaust manifold (25) of said turbine (23) present closing members.
- 5 12. A train, characterized in that it comprises at least one emergency generating unit with gas turbine (23), according to one or more of the claims from 1 to 11.
13. Train according to claim 12, characterized in that it comprises at least one air conditioning system (77) which is powered in the event of an emergency by said emergency generating unit.
- 10 14. Train according to claim 13, characterized in that said air conditioning system is electrically powered by electrical energy generated by said emergency generating unit.
- 15 15. Train according to claim 13 or 14, characterized in that said turbine comprises an exhaust manifold with a mouth (25A) which is essentially in line with the bottom surface (19A) delimiting the bottom of the train.
16. Train according to claim 15, characterized in that said mouth is shaped to disperse exhaust gas from said turbine over a wide space to avoid overheating the items arranged under the train.
- 20 17. Train according to one or more of claims 12 to 16, characterized in that said emergency generating unit is housed in a compartment (19) underneath the floor (17) of the train.
- 25 18. Train according to claim 17, characterized in that a first compartment (19) for said turbine and possibly said electrical generator and said inverter and a second compartment (20) for said fuel tank (41) and possibly a fuel pump are arranged underneath the floor of the train.
- 30 19. Train according to claim 18, characterized in that said first and said second compartments are arranged side by side in the transversal direction of the train.
20. Train according to one or more of claims 12 to 19, characterized

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in that it comprises a plurality of carriages (7A-7F) and each carriage has one emergency power unit (13A-13F).

- 5 21. Train according to claims 13 and 20, or 14 and 20, characterized in that it comprises an air conditioning system for each of said carriages powered by a respective emergency generating unit.
- 10 22. Train according at least to claim 13, characterized in that said conditioning system comprises external air suction vents equipped with closing members controlled by a control circuit, and in that said control circuit interfaces with said emergency generator and with said air conditioning system, and is programmed so that in an emergency the external air vents are periodically closed when the emergency generating unit is running at high power and are periodically opened to exchange air inside the train bringing the emergency generating unit at a low power running condition or stopping it.
- 15 23. Train according to claim 21, characterized in that in emergency conditions the emergency generating units of each carriage are switched on and off cyclically according to a programmed sequence.
- 20 24. Train according to one or more of claims 11 to 22, characterized in that it comprises at least one oxygen tank and oxygen is fed into the train during the operation of at least one emergency generating unit.